

CLAIMS

What is claimed is:

- 5 1. A method for producing a pharmaceutical preparation of pressure-fused particles comprising an active pharmaceutical ingredient, the method comprising:
 - (a) providing a sample comprising said active pharmaceutical ingredient in crystalline or amorphous form;
 - (b) subjecting said sample to high pressure compaction at a pressure of
 - 10 between 0.1 GPa and 10 GPa to produce a compacted sample; and
 - (c) isolating pressure-fused particles from said compacted sample.
2. The method of claim 1, wherein said pressure is between 0.5 GPa and 7.5 GPa.
- 15 3. The method of claim 1, wherein said pressure is between 1 GPa and 5 GPa.
4. The pharmaceutical preparation of claim 1, wherein said produce pressure-fused microparticles have a density of between 1 g/cm³ and 40 g/cm³.
- 20 5. The pharmaceutical preparation of claim 1, wherein said produce pressure-fused microparticles have a density of between between 2 g/cm³ and 20 g/cm³.
6. The pharmaceutical preparation of claim 1, wherein said produce pressure-fused microparticles have a density of between between 4 g/cm³ and 10 g/cm³.
- 25 7. The method of claim 1, wherein said compacted sample has a thickness of between 25 μm and 400 μm.
8. The method of claim 1, wherein said compacted sample has a thickness of
- 30 between 50 μm and 200 μm.

9. The method of claim 1, wherein said compacted sample has a thickness of between 100 μm and 150 μm .
10. The method of claim 1, wherein said pressure is maintained for a period of
5 between 30 sec. and 10 min.
11. The method of claim 1, wherein said pressure is maintained for a period of between 60 sec. and 5 min.
- 10 12. The method of claim 1, wherein said pressure is maintained for a period of between 90 sec. and 3 min.
13. The method of claim 1, wherein said pressure-fused particles have a maximum dimension between 20 μm and 800 μm .
- 15 14. The method of claim 1, wherein said pressure-fused particles have a maximum dimension between 40 μm and 400 μm .
- 15 15. The method of claim 1, wherein said pressure-fused particles have a maximum
20 dimension between 100 μm and 250 μm .
16. The method of claim 1, wherein the step of isolating said pressure-fused particles from said compacted sample comprises sieving said compacted sample through a sieve with an exclusion limit of between 20 μm and 800 μm .
- 25 17. The method of claim 1, wherein the step of isolating said pressure-fused particles from said compacted sample comprises sieving said compacted sample through a sieve with an exclusion limit of between 40 μm and 400 μm .

18. The method of claim 1, wherein the step of isolating said pressure-fused particles from said compacted sample comprises sieving said compacted sample through a sieve with an exclusion limit of between 100 μm and 250 μm .
- 5 19. The method of claim 1, wherein said sample comprises micronized particles comprising said active pharmaceutical ingredient.
20. A pharmaceutical preparation of pressure-fused particles comprising an active pharmaceutical ingredient, the pressure-fused particles comprising:
10 an active pharmaceutical ingredient subjected to high pressure compaction at a pressure of between 0.1 GPa and 10 GPa.
21. The pharmaceutical preparation of claim 20, wherein said pressure is between 0.5 GPa and 7.5 GPa.
- 15 22. The pharmaceutical preparation of claim 20, wherein said pressure is between 1 GPa and 5 GPa.
23. The pharmaceutical preparation of claim 20, wherein said produce pressure-fused microparticles have a density of between 1 g/cm^3 and 40 g/cm^3 .
- 20 24. The pharmaceutical preparation of claim 20, wherein said produce pressure-fused microparticles have a density of between between 2 g/cm^3 and 20 g/cm^3 .
- 25 25. The pharmaceutical preparation of claim 20, wherein said produce pressure-fused microparticles have a density of between between 4 g/cm^3 and 10 g/cm^3 .
26. The pharmaceutical preparation of claim 20, wherein said pressure-fused particles have a maximum dimension between 20 μm and 800 μm .
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27. The pharmaceutical preparation of claim 20, wherein said pressure-fused particles have a maximum dimension between 40 μm and 400 μm .

28. The pharmaceutical preparation of claim 20, wherein said pressure-fused
5 particles have a maximum dimension between 100 μm and 250 μm .